

# Vegetation in the S.E. Suburbs of Melbourne, Australia

by

P. BRIDGEWATER

## 1. Clayton South

Although much of the original vegetation of the south and east suburbs has been cleared, or allowed to degenerate, small 'islands' remain. These 'islands' form the basis of a network of propagule reservoirs (for plants) and habitats (for animals). This paper is the first of a series of occasional articles intended to document the vegetation of some of these sites, particularly those threatened by development.

Clayton lies in the belt of land associated with the tertiary (Sandringham) sand deposits around Port Phillip Bay. Much of the area was covered by heathland vegetation, as noted by Sutton (1911, 1912) and described by Patton (1933) as the Cheltenham Flora. Much of the original Heathland has disappeared due to urbanisation, sand mining and market gardening. A small area still exists however, west of the spring valley golf course, bounded by West-hall Road and Osborne Avenue.

Part of this area has previously been used as a market garden, and the whole area is popular with trail bikes. These two circumstances combine to aid the distribution and establishment of introduced species. Despite this, much of the original vegetation variation is still clear.

There are three main vegetation zones from a physiognomic viewpoint:

1. an area of dry heathland, with an overstorey of *Eucalyptus viminalis* var. *racemosa* (Coastal Manna Gum).

2. a crescent shaped area of wet heathland about 33 feet wide and 660 feet long, with a tall shrub layer (to 17 ft) of *Melaleuca squarrosa*

(Scented Paper-Bark) and *Leptospermum juniperinum*, (Prickly Tea-Tree) and an overstorey of *E. ovata* (Swamp Gum) and *E. cephalocarpa* (Mealy Stringybark), and,

3. an area with a dense growth of *Melaleuca ericifolia* (Swamp Paper-Bark) (to 17 ft) and an absence of *Eucalyptus* spp.

Table 1 shows the results of 11 vegetation samples taken in the least disturbed sites of the dry heathland. Each sample was taken in an area approximately 270 sq ft. Values in the table are those for cover-abundance quoted in Bridgewater (1971).

The table shows two distinct plant communities:

a) recognised by the dominance of *Leptospermum myrsinoides* (Silky Tea-Tree) and

b) recognised by the dominance of *L. laevigatum* (Coast Tea-Tree).

Besides these two dominant species, each of these communities has a number of additional species which help to characterise them. These species are enclosed in the 'boxes' of the table. Both communities are linked by three species—*E. viminalis*, *Lepidosperma concavum* and *Pteridium esculentum*.

The *L. myrsinoides* plant community shows two clear sub-divisions—one defined by the presence of *Acacia oxycedrus*, *Correa reflexa* and *Lophocolea semiteres* (a ground dwelling leafy liverwort), and the second defined by the presence of *Casuarina paludosa* and *Platysace heterophylla*. There are indications of a third sub-community, defined by the presence of *Leptospermum glabrescens* (sample 6).

TABLE I

| Sample Number                                 | 7 | 1 | 8 | 9 | 2 | 5 | 3 | 10 | 11 | 4 | 6 |
|---|---|---|---|---|---|---|---|----|----|---|---|
| <i>Acacia oxycedrus</i>                       |   |   |   |   | + | + |   |    | +  |   |   |
| <i>Correa reflexa</i>                         |   |   |   |   | 2 | 2 |   |    |    |   |   |
| <i>Lophocolea semiteres</i>                   |   |   |   |   | 2 | 2 |   |    |    |   |   |
| <i>Casuarina paludosa</i>                     |   |   |   |   |   |   |   | +  | 2  | 2 |   |
| <i>Platysace heterophylla</i>                 |   |   |   |   |   |   |   | +  | +  | 1 |   |
| <i>Hovea heterophylla</i>                     |   |   |   |   |   |   |   |    | +  | + |   |
| <i>Hypolaena fastigiata</i>                   |   |   |   |   |   |   |   |    | 2  | 1 |   |
| <i>Leptospermum glabrescens</i>               |   |   |   |   |   |   |   |    | +  |   | 2 |
| <i>Banksia marginata</i>                      |   |   |   |   | 1 | + | 3 |    | 1  | 2 |   |
| <i>Rubus fruticosus</i> agg.                  |   |   |   |   | + | + | + |    | 1  |   | 2 |
| <i>Amperea xiphioclada</i>                    |   |   |   |   | 1 |   | 1 | +  | 2  | 2 |   |
| <i>Riccinocarpos pinifolius</i>               |   |   | 2 |   | 2 | 2 | 1 | 2  | 2  | 2 | 2 |
| <i>Bossiaea cinerea</i>                       |   |   |   |   | 2 | 1 |   | 2  |    | + | 2 |
| <i>Billardiera scandens</i>                   |   |   |   |   |   | + | + | +  | +  | + |   |
| <i>Leptospermum myrsinoides</i>               |   |   |   | 2 | 3 | 3 | 3 | 3  | 3  | 3 | 3 |
| <i>L. juniperinum</i>                         |   |   | + | + |   |   |   |    |    |   |   |
| <i>Stellaria media</i> *                      |   | 1 | + | 1 |   |   |   |    |    |   |   |
| <i>Holcus mollis</i> *                        |   | 1 | + | + |   |   |   |    |    |   |   |
| <i>Leptospermum laevigatum</i>                | 4 | 2 | 2 | 3 |   |   | 1 |    |    |   |   |
| <i>Eucalyptus viminalis</i>                   |   | 2 | 2 | + | + |   | 3 | +  | +  | + | 2 |
| <i>Pteridium esculentum</i>                   |   | + | + | 4 | 1 | 1 | 1 | 1  |    | + | 1 |
| <i>Lepidosperma concavum</i>                  |   | + | 2 | 1 | + | 1 | 3 | 1  | 4  | 3 | 3 |
| <i>Pterostylis parviflora</i>                 | 2 |   |   |   |   | 2 |   |    |    |   |   |
| <i>Gahnia radula</i>                          |   |   |   |   |   |   |   |    |    |   | 1 |
| <i>Epacris impressa</i>                       |   |   |   |   |   | + |   |    | +  |   | 1 |
| <i>Platylobium obtusangulum</i>               |   |   |   |   |   |   |   |    |    | + |   |
| <i>Pinus nigra</i> *                          |   |   |   |   |   |   | 2 |    |    | + | 2 |
| <i>Lomandra filiforme</i>                     |   |   |   | + |   |   | 1 |    |    |   |   |
| <i>Thuidium furfursum</i>                     |   |   |   | 2 |   |   | 2 |    |    |   |   |
| <i>Poa australis</i>                          |   |   |   |   |   | + |   |    | +  |   |   |
| <i>Monotoca scoparia</i>                      |   |   |   |   |   |   | + | +  |    |   |   |
| <i>Pittosporum undulatum</i> *                |   |   |   |   |   | + |   | +  | +  | + |   |
| <i>Hypericum gramineifolium</i>               |   |   |   |   |   |   |   |    |    |   |   |
| <i>Cassinia aculeata</i>                      |   |   |   |   |   |   |   |    |    |   |   |
| <i>Agrostis tenuis</i>                        |   |   |   |   |   |   |   |    |    |   |   |
| <i>Themeda australis</i>                      |   |   |   |   |   |   |   |    |    |   |   |
| <i>Viola hederacea</i>                        |   |   |   |   |   |   |   |    |    |   |   |
| <i>Stypandra caespitosa</i>                   |   |   |   |   |   |   |   |    |    |   |   |
| <i>Acacia longifolia</i> var. <i>sophorae</i> |   |   |   |   |   |   |   |    |    |   |   |
| <i>Senecio</i> sp.                            |   |   |   | + |   |   |   |    |    |   |   |
| <i>Ulex europaeus</i> *                       |   |   |   |   |   |   |   |    |    |   |   |
| <i>Goodia latifolia</i>                       |   |   |   |   |   |   |   |    |    |   |   |
| <i>Opercularia varia</i>                      |   |   |   |   |   |   | + |    |    |   |   |
| <i>Hibbertia fasciculata</i>                  |   |   |   |   |   |   | + |    |    |   |   |
| <i>Olearis ramulosa</i>                       |   |   |   |   |   |   | 1 |    |    |   |   |
| <i>Erica lusitanica</i> *                     |   |   |   |   |   |   |   |    |    | + |   |
| <i>Xanthorrhoea minor</i>                     |   |   |   |   |   |   |   |    |    | 1 |   |
| <i>Haloragis teuroides</i>                    |   |   |   |   |   |   |   |    |    |   | 2 |

\* indicates species not native in this area.

Species not recorded in the samples but noted in the vegetation: *Campylopus introflexus*, *Hibbertia acicularis*, *Lomandra longifolia*, *Acacia armata*, *Clematis aristata*.

All the vegetation units described above are closely related, in the first instance, to the topography of the area. The area slopes from a high point in the west, to the lowest point where the *Melaleuca ericifolia* zone occurs. The *L. laevigatum* community, of the dry heathland zone, occurs at the highest points in the area, with least humic material in the soil. The *Acacia oxycedrus*, *Casuarina paludosa* and *Leptospermum glabrescens* variants of the *L. myrsinoides* community occur increasingly downslope of this community, until merging with the *Melaleuca ericifolia* zone.

The wet heathland is so disturbed and small in extent that no vegetation samples were taken. Where it is intact the ground vegetation is a dense mixture of *Calerophus lateriflorus*, *Lepidosperma longitudinale* and *Gahnia radula*. An open area exists between this vegetation and the *Melaleuca ericifolia* zone. Species concentrated in this area include *Olearia ramulosa*, *Viminaria juncea*, *Hakea nodosa*, *Xyris gracilis*, *Patersonia longiscapa*, *Villarsia reniformis*, *Lepyrodia mulleri*, *Baumea juncea* and *Themeda australis*.

Of the three zones described, the *Melaleuca ericifolia* zone is clearly the most disturbed. There are few native species present—and abundant introduced grasses e.g. *Paspalidium dilatatum*, *Anthoxanthum odoratum* and *Holcus lanatus*. There is some evidence that the state of the area has

resulted from clearing operations, and is not a particularly good representation of the former vegetation. Much of the dense *Melaleuca* thickets are invaded by blackberry (*Rubus fruticosus* agg.)

At the lowest point in this whole area is a small bog, with a number of introduced species, but also a few species surviving from pre-settlement swamp conditions e.g. *Eleocharis acuta*, *Juncus pallidus* and *Coryzandra cymbaria*.

Although the area is degenerate, with many species seeding from adjacent plantings (e.g. *Pinus nigra*, *Pittosporum undulatum*) the vegetation variation does fit with other heathland reserves around the bays (e.g. Cranbourne Botanic Gardens annexe) (P. Gullan, pers. comm.) and provides an interesting record for a vegetation system now much diminished. Such records may be helpful in considering conservation of areas or a replanting program that may be undertaken by local government or industrial concerns.

#### REFERENCES

- Bridgewater, P. B. (1971). Practical application of the Zurich-Montpellier System of Phytosociology. *Proc. Roy. Soc. Vict.* 84, 255-262.  
Patton, R. A. (1933). The Cheltenham Flora. *Proc. Roy. Soc. Vict.* 45, 205-218.  
Sutton, C. S. (1911). Notes on the Sandringham flora. *Vic. Nat.* 19, 5-20.  
Sutton, C. S. (1912). Supplementary Notes on the Sandringham Flora. *Vic. Nat.* 19, 79-95.

---

#### ERRATA

In the issue for April 1975, two corrections should be made in the article commencing p 71.

See p 74: Plate I: Fig. 3:—for “Mandibles—lateral view” read:—“Mandibles—ventral view”.

See p 78: Plate V:

No. 25 should read—*Syndesus cornutus*

No. 26 should read—*Lissotes furcicornis*.